Ten (10) pages total
This list is incorporated into the solicitation (pp 70-79)

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item: Unfired Steam Generator

Vendor: Cemline Corporation

Model: H67OUSG1684

Characteristics: Unfired Steam Generators shall be constructed and stamped in accordance with ASME code and bear the UB stamp as required by the ASME code. All vessels are registered with the National Board of Boiler and Pressure Vessel Inspectors and a compliance certificate is furnished. Unfired Steam Generators to generate steam 40 psig or greater will be 100% X-Rayed and heat treated in accordance the ASME code.

Unfired Steam Generators can be constructed with a carbon steel shell and steel components. These Unfired Steam Generators would typically be used when the condensate is returned to the boiler and there is little or no make up water. Carbon steel Unfired Steam Generators are typically used in building heating systems and in humidification where the feed water is not corrosive.

Unfired Steam Generators are furnished with 3" thick fiberglass insulation. This high quality insulation is an extremely reliable means of minimizing heat loss.

Unfired Steam Generators are neatly and attractively covered with a 20 gauge steel jacket over the fiberglass insulation. The jacket protects the insulation and is professionally painted with superior quality enamel which provides an easy to maintain surface.

Unfired Steam Generators are provided with one or more ASME Section I pressure relief valve(s) sized to relieve the total BTU input of the heating coil.

Unfired Steam Generators are furnished with a gauge glass to allow monitoring of the water level in the vessel.

Steam Input Data
Source Steam pressure 30 psig
Source Steam pressure drop 10 psig
Flow rate of produced steam 2920 lb/hr
Pressure of produced steam 10 psig
Make-up water temperature 40 Deg F.
Fouling factor 0.0005 Hr-F-sq.ft/BTU
Unit configuration horizontal
Tube bundle pitch triangular
Tube diameter 1/2 Inch
Tube thickness 20 gauge
Tube material copper
Output Data
Overall heat transfer coefficient 403.0 Btu/hr-sq.ft-F
Total heat transfer rate 3404713.7 Btu/hr
Surface area of tubing required 352.5 sq. ft
Source steam flow velocity 41.1 ft/sec
Flow rate of source steam 3620.0 lb/hr
Minimum Valve Cv Required 61.2
Cemline model configuration and dimensions
Unit Configuration horizontal
Bundle diameter 16 inches
Bundle length 84 inches
Tube diameter 1/2 inch
Tubing area of this model 367 sq. ft

Demonstrate maintainability, including parts/service supports, training and technical documentation.

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item: Blow Down Separator

Vendor: Shipco Pumps

Model: 440 BDS

Characteristics: Each unit shall consist of (1) ASME code stamped for 150 PSIG, steel receiver with automatic after section and 1-1/2" inlet, 4" vent and 4" drain as indicated.

The blowdown tank shall be manufactured of steel ASME code stamped. The receiver shall be elevated with stand and equipped with: stainless steel wear plate, tangential inlet tapping and an automatic aftercooler section with automatic 1-1/4" aftercooler discharge temperature regulating valve, gate valve, wye strainer and thermometer. The receiver tank size shall be as shown on the drawings.

Factory tested with single point power/control connections

Demonstrate maintainability, including parts/service supports, training and technical documentation.

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item:	Custom Field Fabricated Class 3 Return Fan
Vendor:	Energy Labs, Inc.
Model:	Custom
Characteristics:	Structural Steel base Aluminum spark-proof fan wheel construction Certified 1% Maximum Casing Leakage at 10" static. 16 Gauge standard case with 20 Gauge liner Outswing doors in negative sections and inswing doors in positive sections. 2000 Hr salt spray paint over G-90 galvanized steel outer casing.

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item:	Custom Field Fabricated Central Station Air Handlers
Vendor:	Energy Labs, Inc.
Model:	CHHW-FGH-L
Characteristics:	Structural Steel base Aluminum spark-proof fan wheel construction Certified 1% Maximum Casing Leakage at 10" static. 416 SS coil supports and 416 casing on cooling coils. 16 Gauge standard case with 20 Gauge liner Outswing doors in negative sections and inswing doors in positive sections. Low leakage dampers – 5 CFM/SQ FT at 5" static 2000 Hr salt spray paint over G-90 galvanized steel outer casing.

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item:	Custom Field Fabricated Transfer Fan
Vendor:	Energy Labs, Inc.
Model:	CHHWWW-FGH-L
Characteristics:	Structural Steel base Aluminum spark-proof fan wheel construction Certified 1% Maximum Casing Leakage at 10" static. 16 Gauge standard case with 20 Gauge liner Outswing doors in negative sections and inswing doors in positive sections. 2000 Hr salt spray paint over G-90 galvanized steel outer casing.

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item: 480Y/277 Volt Panelboard

Manufacturer: Schneider Electric

Brand: Square "D"

Model: Model NF442L4C

Characteristics:

Features: NF lighting and power distribution panelboard with 200% rated neutrals for non-linear loads. Main and Sub-feed circuit breakers are hard-bussed and vertically mounted. Copper bus is standard. Interiors are field convertible to top or bottom feed. Modular construction to accept field installable sub-feed lugs, thru-feed lugs and sub-feed breakers. Suitable for use as service equipment.

Ratings: 480Y/277 Volt
400 Amp Main Circuit Breaker
65,000 AIC
NEMA Type 1 Enclosure
Surface Mounted
42 Poles

Overall Dimensions: 20" Wide x 5.25" Deep x 68" Height

UL 67 - Standard for Panelboards

UL 50 – Enclosures for Electrical Equipment

UL Listed Class CTL Panelboard

Demonstrated product maintenance characteristics including; parts, service support, training and technical documentation.

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item: Automated Controls

Vendor: Siemens

Model: Custom

Characteristics:
Ethernet switch to communicate with new DDC panels.
All cable to be provided and installed by Controls contractor.
UPS backup for existing Siemens server.
Siemens existing server is Bacnet compliant.
All new DDC panels will be Bacnet compliant.
Mixing box control.
Fully modulating reheat valve control.
Damper motors as required.
Discharge temperature sensors.
Room temperature sensors with override switch, minimum 3 per AH.
Supply and return fan multiple VFDs physical points.
Start/stop.
Status via current switch.
Speed output.
Speed input.
Fan alarm.
Fan power (KW).
P1 Connection for multiple software points.
Fully modulating Preheat valves.
Multiple low temperature sensors.
Multiple preheat discharge temperature sensors.
Supply fan high and low static pressure.
Static pressure 2/3 down stream.
Airflow measuring station DFM (station with 4-20MA or 0-10 volt output provided by unit manufacturer).
Smoke detector input (smoke detector provided by others) supply and return.
Humidifier control.
Duct humidistat.

High limit humidifier.
Space humidity sensor.
Pneumatic steam valve.
Temperature switch.
Mixed air temperature.
Multiple outdoor air damper motors (dampers by others).
Multiple return dampers (dampers by others).
Multiple exhaust damper motors (dampers by others).
Return temperature.
Supply fan power (kw).
Multiple software points.
Prefilter status.
Final filter status.
Multiple low temperature sensors.
Multiple preheat discharge sensors.
Low static pressure.
High static pressure.
Air flow measuring station input (AFM by others).
Multiple outdoor air damper motors.
Outdoor air damper end switches.
Clean Steam Generator.
Communication to manufacturer controller via Bacnet.
All devices provided by manufacturer, wired by Siemens.
Siemens hardwired points.
Enable/disable.
Status.
3 generator alarm points.
Return humidity.

LIST OF BRAND NAME OR EQUAL EQUIPMENT
SALIENT CHARACTERISTICS

Item: Steam Humidifier – Air Handler - Dispersion Panel System

Vendor: Armstrong International

Model: Custom

Characteristics:

Steam distribution system for distribution of humidity (steam vapor) into air handling system.

Humidifier shall have modulating control to provide 0% to 100% of maximum capacity. Humidifier is field-adaptable to 0-10 Vdc, 1.9-3.9 Vdc, 4-20 milliamp, 0-135 ohms, or an on/off input signal.

Humidifier shall include lights indicating the unit has power on.

Humidifier shall incorporate electrical terminals for installation of controlling stat, duct high-limit stat, interlock switch and Class 2 alarm device.

Humidifier shall have type 316 stainless steel steam dispersion panels with integral tube(s) providing uniform steam distribution over the entire tube length and shall be supplied at various lengths (through 10') to adequately span the widest dimension of the air handler duct. Alternately, humidifier shall be supplied with prefabricated separator/header and multiple dispersion tube assembly designed for the application in order to shorten the non-wettable vapor trail.

Demonstrate maintainability, including parts/service supports, training and technical documentation.